

COURSE DETAIL

FLUIDS MECHANICS I

Country

Singapore

Host Institution

National University of Singapore

Program(s)

National University of Singapore

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mechanical Engineering

UCEAP Course Number

123

UCEAP Course Suffix

A

UCEAP Official Title

FLUIDS MECHANICS I

UCEAP Transcript Title

FLUID MECHANICS I

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course introduces fluid mechanics as applied to engineering. After introducing the basic terminology and a classification of fluid and flow, the course presents fluid statics, which cover hydrostatic forces on submerged bodies, surface tension forces, buoyancy, metacentric height, and stability of floating bodies. The course presents numerous examples of engineering applications pertaining to each aspect of fluid statics. In the section on fluid dynamics, the course introduces basic principles of fluid motion. Topics include continuity equation, Bernoulli and energy equations, and free-surface flows including hydraulic jumps, the momentum equation and its engineering application using the control volume approach, flow measurements and common pressure instrumentation, velocity and volumetric measurements, analysis of engineering results, the dimensional analysis and similitude.

Language(s) of Instruction

English

Host Institution Course Number

ME2134

Host Institution Course Title

FLUIDS MECHANICS I

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mechanical Engineering

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